

REMARKS

Reconsideration and allowance of this application, as amended, are respectfully requested.

The claims have been revised to overcome the 35 U.S.C. § 112 rejections.

Applicant appreciates the Examiner's indication of allowable subject matter in claims 9-10.

Claims 1-3, 6-8, 11 stand rejected based on Mehnert et al. (USP 3,892,513), and claims 4-5 are obvious over Mehnert et al. (USP 3,892,513) and Smith et al. (USP 6,228,317) or Palazzolo (USP 5,617,768). The claims have been amended to more clearly set forth Applicant's patentable combinations vis a vis the prior art references of record. More specifically, the claims have been amended to specify the cutting site with an end portion of the intermediate molded article, based on the description (page 7, lines 21-22, page 8, line 26 to page 9 line 1, page 9 line 24 to page 10 line 6, page 13, lines 4-7, and page 15, lines 12-14).

Further, we more clearly set forth description of the technical relation of a groove or slit formed in both metal mold members and a cutting means, based on claim 3 and the description (page 7, lines 21-27 and page 12, lines 3-13).

The Mehnert et al. (USP 3,892,513) reference describes a blow-molded container having handles. It discloses a separation of a flushing 29 by reciprocating a ram 16 relative to a ram 18. The two mold sections 8a and 8b are provided with recesses 13a and 13b. Recess 13a is defined by a surface 14 and a front edge 15 of a ram 16, and recess 13b is defined by an end face 17 of a counter ram 18. The delimited space 19 is surrounded by cutting edges 20a and 20b of a triangular configuration for the flashing (column 3, lines 50-63). Further, the end face 15 of the ram 16 can move in the direction forwards the ram 18 (in the direction of the arrow B) to separate the flushing 29 in the opening 5 from the thin

remaining webs 21, while maintaining a counter pressure between the rams 16 and 18, and this separation is effected not only by a translatory movement along axes of the rams 16 and 18, but also by a radial movement (column 4, lines 27-41).

The Examiner suggests that ram 16 corresponds to a cutting means, and that ram 18 corresponds to a stopper.

The Smith et al. (USP 6,228,317) reference describes a wide mouth blow-molded plastic container and teaches the following. The inner surface 22 of the mold 21 has a tapered protrusion 21c that terminates in an acute bight 21d (column 3, lines 45-51). The acute bight (the protrusion) 21d is severed by application of a cutting means directed radially inward into the bight 21e, and the cutting angle is preferably substantially parallel to the surface 17a. The author's preferred cutting means is an elongate heated knife blade 27 which severs the protrusion wall when the intermediate container article is rotated about its longitudinal axis as it advances along a track with a moving belt in the groove to rotate the intermediate article relative to the knife blade 27 (column 3, line 66 to column 4, line 9 and FIG. 2A).

The Palazzolo (USP 5,617,768) reference describes a trimming apparatus for removing the dome scrap from a blow, molded bottle. It teaches that the apparatus includes an advancement wheel 12 and a rotation wheel 14 mounted on opposite side of a path. A knife assembly 62 is adjustably mounted beneath the advancement wheel 12 and includes a knife blade 64 which extends the path 16 slightly in front of the area tangent to the wheels 12 and 14. When the bottle 150 reaches the area of the path tangent to the wheels 12 and 14, the knife blade 64 contacts the notch 150A of the bottle 150 and severs the dome scrap 152 (Abstract). The knife assembly 62 is pivotably mounted beneath one of the wheels 12 or 14 such that in the cutting position, the knife blade 64 of the knife assembly 62 extends into the

path 16 between the wheels 12 and 16 slightly in front of the area where the bottle 150 is tangent with both wheels 12 and 14 (column 8, lines 29-34).

The cited prior art references do not teach or even suggest our claimed combinations. First, they do not teach including the formation of the groove or slit in the both metal mold members in which the cutting means is disposed movably or slidably. Second, they do not teach the cutting means movably disposed in the groove or slit formed in the both metal mold members for cutting the end of the hollow intermediate article in the blow molding step.

Mehnert et al. (USP 3,892,513) teaches that the delimited space 19 is surrounded by cutting edges 20a and 20b, and that the forward movement of the end face 15 of the ram 16 to the ram 18 separates the flushing 29 in the opening 5 from the thin remaining webs 21. However, Mehnert et al. does not teach or suggest the groove or slit formed in the both metal mold members or a groove or slit formed in the both metal mold members in which the reciprocal cutting means is movably disposed.

Smith et al. (USP 6,228,317) teaches that the acute bight (the protrusion) 21d is severed by application of a cutting means directed radially inward into the bight 21e. However, Smith et al. only cut the protrusion. Thus, according to Smith et al., the end of the article would not be cut with the cutting means movably disposed in the groove or slit formed in the both metal mold members.

Further, Palazzolo (USP 5,617,768) discloses the knife blade 64 of the knife assembly 62 for trimming a blow molded bottle. However, Palazzolo also fails to teach that the cutting means is movably disposed in the groove or slit formed in the both metal mold members.

Our claimed inventions achieve unexpected advantages in operation. According to Mehnert et al., the forward movement of the end face 15 of the ram 16 to the ram 18 is used for the separation of the flushing 29. Further, Smith et al. only cuts the protrusions.


Therefore, the cutting efficiency at the end portion of the hollow intermediate article could not be improved by Mehnert and Smith references.

Since Palazzolo removes the dome scrap from a blow molded bottle for trimming by knife blade 64 of the knife assembly 62, the cutting of the end portion of the hollow intermediate molded article cannot be conducted efficiently.

However, in our claimed arrangements, cutting efficiency of the hollow intermediate article can be improved in the molding process. Productivity of the hollow product can be improved while reducing production cost. The arrangements suggested by the references achieve no such result.

All outstanding matters having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

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